

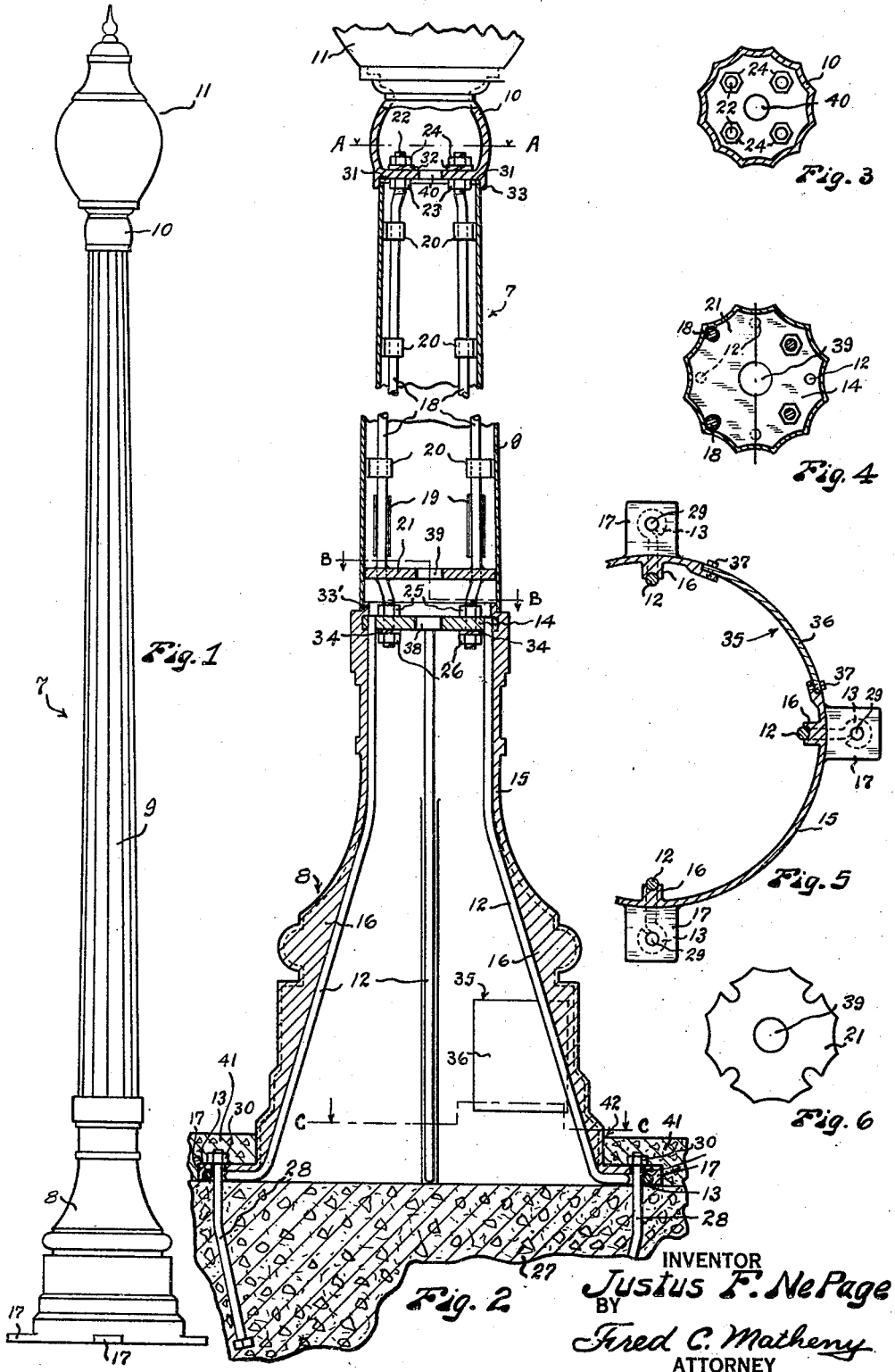
Oct. 11, 1932.

J. F. NE PAGE

1,882,228

METAL LAMP POST

Filed Sept. 29, 1928



INVENTOR  
*Justus F. NePage*  
BY  
*Fred C. Matheny*  
ATTORNEY

## UNITED STATES PATENT OFFICE

JUSTUS F. NE PAGE, OF SEATTLE, WASHINGTON, ASSIGNOR TO NE PAGE MCKENNY CO.,  
OF SEATTLE, WASHINGTON, A CORPORATION OF WASHINGTON

## METAL LAMP POST

Application filed September 29, 1928. Serial No. 309,242.

My invention relates to improvements in metal poles and posts in general and particularly to metal lamp posts of artistic design, adapted to be erected in sections and particularly suitable as ornamental street lighting standards.

Attempts have been made heretofore to devise a satisfactory sectionalized ornamental lamp post comprising a metal base and capital, and a pressed metal shaft; and many ingenious fastening means have been used to hold the assembled sections together and to anchor the base of the lamp post to its foundation. Lugs extending radially outward from the cast metal base have been found inadequate as anchoring means because of the liability to breaking of both the lugs themselves and the skirt of the base opposite the lugs in case of impact from vehicular collisions, unless the base is cast of steel or other metal of high tensile strength.

It is desirable, however, to use either cast iron or bronze for the base because of the ease with which the ornamental embellishments may be cast, and because of the smooth surface finish obtained by the use of these metals. Another reason for using cast iron is because it is less expensive than the other metals that may be used for this purpose.

Where other base fastening means have been used the resulting complications have been found undesirable especially in the matter of replacing lamp posts that have been damaged in collisions.

The principle object of my invention is to provide a sectionalized metal lamp post that may be readily assembled section by section during the process of erection.

Another object is to provide improved means in the construction of the base section of metal lamp posts whereby the same is reinforced to withstand greatly increased tension stresses, thereby enabling it to be made of relatively inexpensive cast metal.

A further object resides in providing a strong and readily accessible means of fastening the base section of metal lamp posts and the like to their foundations.

An additional object consists of providing means of reinforcing the shaft member

of sectionalized metal posts or similar structures whereby the same is strengthened and the cost of manufacture reduced.

These and other objects and advantages will be apparent from the following description in connection with the accompanying drawing, in which like reference numerals indicate the same parts throughout the different views, and in which;

Figure 1 is an elevation of an ornamental lamp post embodying the invention.

Figure 2 is a sectional elevation of the same drawn to a larger scale, parts being broken away.

Figs. 3, 4 and 5 are sectional views of Fig. 2 taken at A—A, B—B, and C—C, respectively.

Fig. 6 is a detached plan view of the rod spacing and stiffening plate.

Referring to the drawing, the ornamental lamp post 7 is shown made up of a reinforced base member 8, preferably of cast iron, a reinforced shaft member 9, which may be constructed of sheet iron, steel, bronze or other material, and capitol or top member 10, usually made of cast metal of a kind suitable for the purpose. A glass lamp canopy 11 and a suitable lamp socket and appended devices, not shown, are adapted to be supported by and secured to top member 10.

Base casting 8 is reinforced against tension resulting from high wind velocities, earthquakes, impacts from collisions and the like, by means of reinforcing rods 12 having eyes 13 formed at one end, and their other ends secured to a steel plate 14, preferably by welding.

The reinforcing rod assembly consisting of rods 12 and steel plate 14 is preferably made an integral part of the base by casting the body portion 15 around the reinforcing after it is placed in the mould and then welding the rods to the steel plate. Ribs 16 are provided to stiffen the casting and to position rods 12 which are partially imbedded therein as indicated clearly in Fig. 5.

In manufacturing the reinforced base section, a mould of the section is made in the foundry by means of a suitable pattern, preferably with the small end up so the perfo-

rated anchor plate 14 may be positioned on the top of the interior green sand core. The plate, being larger than the end of the core, obviously will be imbedded in the top of the casting. The reinforcing rods 12 are then partly imbedded in corresponding lengthwise prints in said green sand core with their upper ends in the perforations in said plate 14 and with their eye ends 13 positioned for embedment preferably in the heavy, cast, exterior anchoring lugs 17. After closing the mould the molten metal is poured into the same thus imbedding the plate and eye ends of the rods in the casting and partly imbedding rods 12 in ribs 16. After the metal has solidified and before it has cooled, the small end of the casting is uncovered to expose plate 14 to which rods 12 are then readily welded. Upon cooling the steel rods will be stressed in tension, due to the higher temperature coefficient of construction of steel, hence they become immediately effective in reinforcing the base when subjected to tension stresses.

This is a distinctive feature of the invention and makes possible the use of exterior anchoring lugs 17 which are cast integral with the eye ends 13 of rods 12, thus assuring an unusually strong and readily accessible means of anchoring the base member. It is apparent that this construction, employing say cast iron for the body portion 15 and steel for rods 12, is well adapted to withstand compression strains because cast iron has a high compressive strength, and likewise to withstand tension strains because the reinforcing rods have a high tensile strength.

The pressed metal shaft member 9 is reinforced by longitudinally disposed rods 18 fixedly attached thereto near their lower extremities, preferably by welding or brazing as illustrated at 19; and slidably attached at other points throughout their length by means of straps 20. A plate 21 is in turn fixedly secured to rods 18, usually by welding. It is the purpose of this plate to position rods 18 and equalize the stresses between them, thus stiffening the shaft at its lower extremity. The end projections of rods 18 are provided with threads 22 and nuts 23, 24, 25 and 26, which constitute the means of removably fastening the three principal elements together as hereinafter described.

In erecting a lamp post embodying the invention, it is usually desirable to first position base 8 on foundation 27 in which bent anchoring bolts 28 have been cast in the usual way. The bolts are so spaced that their threaded ends pass through holes 29 provided in lugs 17 for that purpose. After the base has been plumbed and grouted in, and the grouting has set, nuts 30 are tightened against lugs 17 thus securely yet removably fastening the base to the foundation.

Top member 10 is usually assembled with shaft 9 before the latter is raised to position on base 8 thus completing a reinforcing cage for the shaft comprising plate 21, rods 18 and the aforesaid top member. This is done by adjusting nuts 23 to align the center line of the top member with the center line of the shaft, care being taken to provide a space 31 between the end of shaft 9 and top 10 sufficient to provide for the unequal expansion of the shaft and reinforcing rods 18. This space is particularly important where steel rods are used to reinforce a bronze shaft, because of their unequal rates of expansion and contraction. When the adjustment of nuts 23 is completed, nuts 24 are run up tight on spring washers 32, the nuts being readily accessible through the open throat of top 10, shown by dotted lines in Fig. 2. The downwardly projecting skirt 33 conforms to, and snugly fits around the top of shaft 9, thus serving to prevent the entrance of moisture and likewise to position the top laterally with reference to the shaft. Shaft 7 is positioned laterally at its lower extremity by means of projection 33' of base 8 which conforms to the inner wall of the shaft.

Before shaft 9 and appended top member 10 are positioned on base 8, nuts 25 are so adjusted that they will maintain the shaft in a vertical position and fixedly secure the shaft member to the base. The assembly of these members is completed by tightening nuts 26 against spring washers 34 the same being readily accessible through opening 35 which is removably covered by door 36 normally secured to base 8 by means of cap screws 37.

Apertures 38, 39 and 40 are provided in plates 14 and 21 and in the base of top member 10 through which electrical conductors may be drawn to supply current to the light unit previously mentioned.

Ample space is provided within the interior of base 8 for underground conduits, cables, pot heads, transformers or other electrical equipment incident to the operation of ornamental street lighting systems. None of the electrical items, just mentioned, are shown in the drawing as they are not a part of the invention.

The lamp post assembly is completed by adding the lamp, not shown, and the desired glass lamp canopy 11. Nuts 30 are usually painted with tar or an asphaltum compound and buried under the top layer of side-walk concrete 41, the top surface of which makes a neat joint with the lower side wall of base 8 at 42. This construction prevents the loosening of nuts 30 which might otherwise occur as the result of vibration incident to heavy vehicular traffic, the passage of street cars, high winds and the like.

It is apparent from this specification that the invention provides an effective and eco-

nomical means of reinforcing the principal members of lamp posts whereby lighter and less expensive materials may be used, thus reducing the cost of manufacture, simplifying the method of construction and providing a safer and more reliable article of manufacture.

My invention is not necessarily limited to the details of construction as herein illustrated and described, for it is obvious to one skilled in the art that many changes in the design, construction and use of materials may be made to adapt the invention to the various conditions of practice.

Having thus described my invention, what I claim and desire to have protected by Letters Patent is:

1. In a sectional metal lamp post, a hollow base section of cast metal, ribs extending lengthwise of said base section and projecting inwardly from the inner wall thereof, and reinforcing rods extending lengthwise within said base section from bottom to top thereof, said rods being imbedded in the inner edges of said ribs and means for anchoring the ends of said rods by casting the same integral with the top and bottom portions respectively of said base.

2. In a sectional metal lamp post, a hollow base section of cast metal, a plurality of inwardly projecting ribs extending lengthwise of the walls of said base section, reinforcing rods extending lengthwise within said base section and partly imbedded in the inner edges of said ribs, means for anchoring one end of said rods by casting them integral with the base, and means cast integral in the opposite end of said base for fixedly anchoring the other ends of said rods.

3. In a sectional metal lamp post, a hollow metal base, convergent from the bottom upwardly, outwardly extending lugs integral with said base for receiving anchor means, reinforcing rods extending lengthwise of said base along the inner walls thereof, the bottom ends of said rods being bent outwardly and having eye members embedded in said base lugs and means cast integral with the upper end of said base and having the upper ends of said rods securely anchored thereto.

4. In a sectional metal post, a hollow base section of relatively thin cast metal having a plurality of interior longitudinal ribs of relatively great compressive strength and provided with an ornamental exterior, and reinforcing rods of relatively great tensile strength extending lengthwise of, and partly imbedded in the edges of said ribs and means cast integral with said base for anchoring the top and bottom ends of said rods to the respective ends of said base.

5. In a sectional metal post, a hollow metal base of downwardly expanding shape, outwardly extending perforated anchor lugs formed at the bottom of said base, reinforcing

rods extending lengthwise of, and spaced at intervals around the inner walls of the same, outwardly bent portions on the bottoms of said reinforcing rods having eye members cast within said lugs in registration with the perforations of the lugs, and a plate cast within the upper end of said base, the upper ends of said rods being fastened to said plate.

6. The apparatus as claimed in claim 5 in which anchor bolts extend through said anchor lugs and through the eyelets of said reinforcing rods to removably secure said base to a foundation.

7. In a sectional metal lamp post, a hollow cast metal base section, a plurality of longitudinal reinforcing rods spaced around the inner walls of said base and extending from top to bottom of the same, means for securing one end of said rods by casting the same in said base, and means for securing the other end of said rods to the opposite end of said base after the base is cast, and the molten metal is solidified but before it has cooled.

8. The method of reinforcing cast metal sections of ornamental street lighting standards, which consists of positioning an annular anchor plate having a plurality of spaced apart holes at one end of a mold whereby the same will be embedded in the casting around its exterior edge; and so positioning a plurality of longitudinal reinforcing rods that the same will be spaced around and partly embedded in the inner wall of said mold with one of their ends passing through the holes in said plate and with their other ends positioned for embedding in substantial sections of the casting at the end opposite that in which the plate is to be secured; and then pouring molten metal into the mold and welding the ends of said rods to said plate after the solidification of said metal.

9. The method of reinforcing cast metal sections for street lighting standards, which consists in providing a mold for the section, supporting a perforated anchor plate so that its edges will be embedded in the section at the upper end of the mold, supporting a plurality of reinforcing rods lengthwise within said mold with their upper ends in the perforations in said plate and their major portions positioned for partial embedment in the inner wall of the cast section and their lower ends positioned for embedment in the lower ends of the section to be cast; then pouring molten metal into the mold and then welding the upper ends of the rods to said plate after the solidification of the metal.

10. In a sectional metal lamp post a hollow base section, a reinforced shaft section comprising a tubular shell, a plurality of rods extending lengthwise within and adjacent the walls of said shell, fixed fastening means se-

curing said rods to said walls near the lower end of said shell, guides slidably connecting said rods with said walls above said fixed fastenings, and means on the lower ends of said rods for adjustably aligning said shaft section with and removably securing the same to said base.

11. In a sectional metal lamp post having a base mounting, a reinforced shaft section comprising the combination of a tubular shell, a plurality of rods adjacent the inner walls of said shell, means for spacing and for equalizing the stresses in said rods near the lower end of said shell, means fixedly fastening said rods to said shell near the lower end thereof above said spacing and equalizing means, means slidably connecting said rods with said shell above said fixed fastenings to provide for inequalities in expansion and contraction and means on the ends of said rods for adjustable connection to said base.

12. In a sectional metal lamp post having shaft and top sections, a reinforced shaft section comprising the combination of a tubular shell, a plurality of rods adjacent the inner walls of and projecting from the ends of said shell, means for spacing and equalizing the stresses in said rods near the lower end of said shell, means fixedly fastening said rods to said shell near the lower end thereof above said spacing and equalizing means, means slidably connecting said rods with said shell above said fixed fastenings and means on the upper ends of said rods to adjustably align and support said top section and to complete a reinforcing cage for the strengthening and support of said tubular shell.

13. In a sectional metal post, a base section, a tubular shaft section resting on said base section, a plurality of rods extending lengthwise along the inner walls of said post section, guides slidably connecting said rod with the walls of said post section, means rigidly securing said rods to the walls of said post section, a top section near the lower end thereof, the top ends of said rods and means securing the bottom ends of said rods to the top end of said base section.

14. A sectional metal lamp post comprising a base, a tubular shaft mounted on said base, a lamp section mounted on said shaft, a plurality of rods, a peripherally notched annular member for spacing said rods adjacent the inner walls of said shaft, means fixedly securing said rods to said shaft and to said annular member and means adjustably securing the lower ends of said rods to the top of said base for the transmission of both tension and compression forces.

15. In a sectional metal lamp post, the reinforced cast metal base section claimed in claim 3 in axial combination with a reinforced shaft section comprising a tubular shell, a plurality of rods adjacent the inner

walls of said shell, means within said shell near the lower end thereof for spacing and for equalizing the stresses in said rods, means fixedly fastening said rods to said shell near the lower end thereof above said spacing and equalizing means, means slidably connecting said rods with said shell above said fixed fastenings to provide for inequalities in expansion and contraction, means on the lower ends of said rods for adjustable connection to said base, and a top lamp section adjustably supported by the top rod ends of said shaft section thereby completing a reinforcing cage for said shell.

The foregoing specification signed at Seattle, Wash., this 19th day of Sept., 1928.  
JUSTUS F. NE PAGE.

76

75

83

85

90

95

100

103

110

115

120

125

130